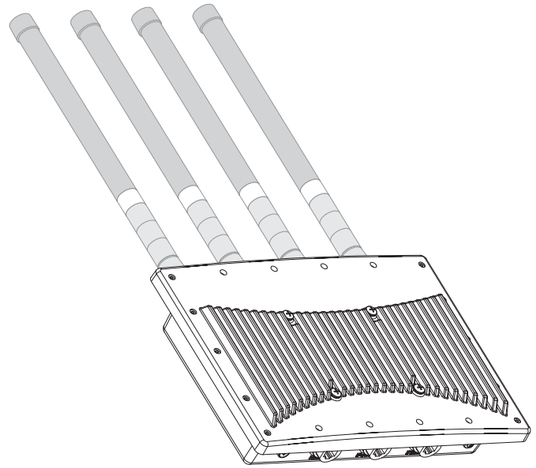
Altitude™ 3550 Access Point

Installation Guide



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Extreme Networks, Inc.
3585 Monroe Street
Santa Clara, CA 95051
(888) 257-3000
(408) 579-2800
http://www.extremenetworks.com

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To the Installer

This guide is intended for the professional end users or technicians responsible for installing the AP3550 model access point. It assumes the technician is familiar with basic Ethernet LAN-based networking and device installation concepts. This guide provides specifications, procedures and guidelines to use during the installation process. This guide does not provide site-specific installation procedures. For detailed site-specific installation procedures, refer to the site-specific documentation derived from site survey and site network analysis.

Note - This AP3550 Installation Guide is intended to assist professional installers with the installation of the AP3550. Once secured in its intended operational position, refer to the AP35xx Product Reference Guide for detailed instructions on configuring the access point's feature set. For more information, go to http://www.extremenetworks.com/go/documentation.

Verifying Package Contents

Inspect the contents and report any missing or damaged items to your sales representative.

The AP3550 access point ships with the following components:

- 1 AP3550 802.11 a+bg dual-radio access point (AP3550-US Part No. 15722 AP3550-ROW Part No. 15726)
- 1 AP3550 Installation Guide (this document)
- 1 set of cable connectors
- 3 antenna connector dust covers
- 2 connector cover AP67 jacks, plus chain_LTW-M9/14-SB

Note: An RJ-45 to Serial (9-pin D) cable is required to make a connection to the AP3550's Console port. This cable is not supplied and must be provided by the customer. The pinouts for this cable are shown in the following table.

RJ-45	1	2	3	4,5	6	7	8
DB9	8	6	2	5	3	4	7

To mount the AP3550 access point to a pole (1.5 - 18 inches in diameter) or wall, an AP3550 Mounting Kit (Part No. 15733) can be separately ordered. This kit contains the brackets and accessories required to mount the access point.

If installing the AP3550 in an outdoor area prone to high winds and rain, Extreme Networks recommends using the AP3550 Heavy Weather Kit (Part No. 15732). This kit affords additional protection to shield an AP3550 from high wind and water damage as a result of driving rain.

If using a single-port Power-Over-Ethernet solution to supply power to the AP3550, the AP3550 Power Tap (Part No. 15729) must be used. This single-port power injector is designed specifically for outdoor use with the AP3550.

Safety Information

Before operating any equipment, review this document for any hazards associated with installation and use of the device. Also, review standard practices for preventing accidents.

- Only trained and qualified personnel should install and remove the Power Injector.
- The power cord must be a three-conductor type (two current carrying conductors and one ground conductor) terminated on one end by an IEC 60320 appliance coupler (for Power Injector connection) and on the other end by a plug containing a ground (earth) contact.
- The power cord must be rated for a minimum of 250VAC RMS operation, with a minimum rated current capacity of 5A [or a minimum wire gauge of 18AWG (0.75mm²)].
- The AC wall-socket outlet must be near the Power Injector and easily accessible.
- The Power Injector **Data** and **Data & Power** interfaces are qualified as SELV (Safety Extra-Low Voltage) circuits according to IEC 60950. These interfaces can only be connected to SELV interfaces on other equipment.

Warnings

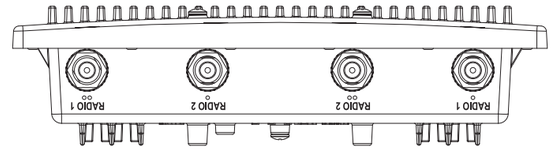
- Read the installation instructions before connecting the Power Injector to a power source.
- Follow basic electricity safety measures whenever connecting the Power Injector to its power source.
- This product relies on the building installation for short-circuit (over current) protection. Ensure a fuse or circuit breaker no larger than 120 VAC, 3A U.S. (240VAC, 1.5A international) is used on the phase conductor.
- A voltage mismatch can cause equipment damage and could pose a fire hazard. If the voltage indicated on the label is different from the power outlet voltage, do not connect the Power Injector to that particular outlet.
- The Power Injector **Data In** and **Data & Power Out** ports are shielded RJ-45 sockets. Only RJ-45 data connectors should be connected to these sockets.

Introduction

The AP3550 is a ruggedized access point designed for outdoor deployments. The AP3550 employs a dual-mode simultaneous 802.11a and 802.11g radio solution.

Product Description

The AP3550 has a separate LAN and WAN port for connecting to the network and receiving power (over the AP3550's LAN port only). The AP3550 has four antenna connectors (on top) supporting 802.11a and 802.11g antenna options. However, the AP3550 antenna suite is designed for outdoor deployments, so the existing AP3510 antenna suite should not be used with an AP3550. The AP3550's mode of operation is identical to the AP3510's.



Mounting the AP3550

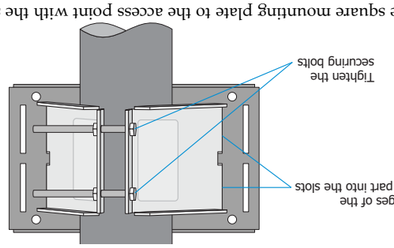
The AP3550 can be mounted to a pole (1.5 - 18 inches in diameter) or to a wall. The AP3550 Wall Mounting Kit (Part No. 15733) is not included with AP3550 and must be ordered separately.

The mounting bracket has four parts: one rectangular plate used for pole and wall mounting, one square plate that attaches directly to the AP3550 and two plates forming an adjustable V-shaped clamp for pole mounting.

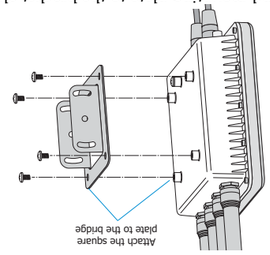
Mounting the AP3550 on a Pole

1 Ensure the AP3550 is oriented properly, and fit the edges of the V-shaped clamp parts into the slots on the flat side of the rectangular plate.

2 Place the V-shaped bracket clamp parts around the pole and tighten the nuts just enough to hold the bracket to the pole. (The bracket may need to be rotated around the pole during the antenna alignment process).

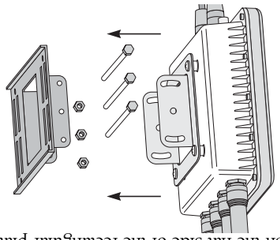


3 Attach the square mounting plate to the access point with the supplied screws.



4 Attach the AP3550 and mounting plate to the bracket already fixed to the pole. If necessary, use the "U-bracket" (included in the mounting kit), in conjunction with the band clamp, to expand the diameter of the bracket to a maximum if 18 inches.

5 Secure the AP3550 to the pole.

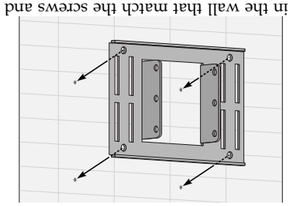


5 Secure the AP3550 to the bracket. Fit the edges of the V-shaped clamp parts into the slots on the flat side of the rectangular plate.

4 Attach the square mounting plate to the AP3550 with the supplied screws. Attach the AP3550 to the plate on the wall.

3 Secure the bracket to the wall.

2 Drill four holes in the wall that match the screws and wall plugs.



1 Ensure the AP3550 is oriented properly, and attach the bracket to a wall with flat side flush against the wall. Position the bracket in the intended location and mark the positions of the four mounting screw holes.

Mounting the AP3550 on a Wall

Note: The AP3550 tilt angle may need to be adjusted during the antenna alignment process. Verify the antenna polarization angle when installing, and ensure the antennas are oriented correctly in respect to the AP3550's coverage area.

Technical Specifications

Physical Specifications
Dimensions 12 inches long x 8.25 inches wide x 3.5 inches thick
Housing Aluminum
Weight 4 lbs.

Environmental Specifications
Temperature-30°C to 55°C (Operating), -40°C to 85°C (Storage)
Humidity 5% to 95% Non-condensing (both Operating and Storage)
Altitude8,000 feet/2438 m @28°C (Operating)
15,000 feet/4572 m @12°C (Storage)
Electrostatic Discharge15kV (air) @ 50% th, 8kV (contact) @ 50% r
DropBench drop 36 inches to concrete
Wind Blown Rain40 MPH @ 0.1inch/minute, 15 minutes
Rain/Drip/SpillIPX6 Spray @ 4L/minute, 10 minutes
DustIP5X 20mb vacuum max, 2 hours, stirred dust, .88g/m^3

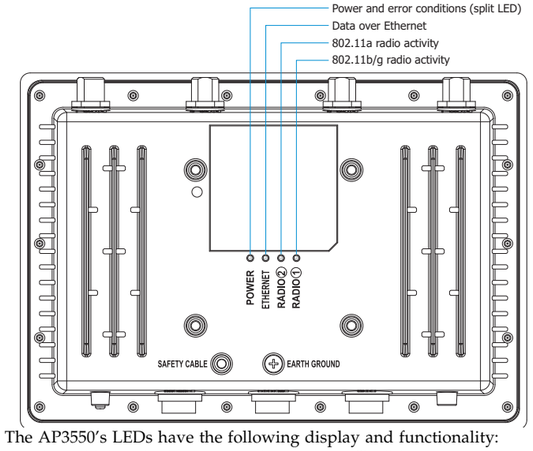
Electrical Specifications
Nominal Operating Voltage 48Vdc
Nominal Operating Current 250mA

Antenna Specifications
for selection of the recommended external antennas see the *Altitude™ 35xx/45xx AP Antenna Selection Guide* available from http://www.extremenetworks.com/go/documentation

Caution: The recommended 2.4 and 5.5 GHz antenna models are rated for the AP3550 model access point and its intended outdoor deployment. The models are not intended for use on an AP3510 model access point.

AP3550 LEDs

The AP3550 access point has four LEDs matching the functionality of the AP3510 model access point. However, the AP3550's LEDs are on the bottom of the access point.



The AP3550's LEDs have the following display and functionality:

- *Power Status* - Solid **white** indicates the AP3550 is adequately powered.
- *Error Conditions* - Solid **red** indicates the AP3550 has a problem requiring attention.
- *Ethernet Activity* - Flashing **white** indicates data transfers and Ethernet activity.
- *802.11a Activity* - Flickering **amber** indicates beacons and data transfers over the radio.
- *802.11b/g Activity* - Flickering **green** indicates beacons and data transfers over the radio.

Note: When starting the access point in cold weather (below -30°C), there might not be any LED indicator activity, even though the access point may be receiving power.

Powering the Access Point

An AP3550 model access point receives power via an Ethernet cable connected to the AP3550's LAN port (using unused pairs).

When users purchase an Extreme Networks WLAN solution, they often need to place access points in obscure locations. In the past, a dedicated power source was required for each access point in addition to the Ethernet infrastructure. This often required an electrical contractor to install power drops at each access point location. An approved solution merges power and Ethernet into one cable, reducing the burden of installation and allows optimal access point placement in respect to the intended radio coverage area.

The AP3550 model access point is powered using the Extreme Networks Power Tap (Part No. 15729). The Power Tap is a ruggedized solution designed for outdoor deployments. The Power Tap may be deployed outdoors at the access point location, or deployed indoors to inject power over the Ethernet cable to an AP3550 located outdoors.

A Power Tap receives power and is ready for AP3550 connection and operation as soon as AC power is applied. There is no On/Off switch.

Caution *- The AP3550 accepts Power over Ethernet only on un-used pairs. Using the wrong power solution (including a non-compliant POE system or a solution not rated for outdoor use) could severely damage the AP3550 and void the product warranty.*

Caution *- For Power Tap installations, an electrician is required to open the unit, feed the power cable through the Line AC connector, secure the power cable to the unit's three screw termination block and tighten the unit's Line AC clamp (by hand) to secure the power cable. Only a certified electrician should conduct the installation. Additionally, an electrician must attach a ground cable between the EARTH GROUND connector (on the back of the unit) to a suitable earth ground connection as defined by your local electrical code.*

Customer Support

Note - Services can be purchased from Extreme Networks or through one of its channel partners. If you are an end-user who has purchased service through an Extreme Networks channel partner, please contact your partner first for support.

Extreme Networks Technical Assistance Centers (TAC) provide 24x7x365 worldwide coverage. These centers are the focal point of contact for post-sales technical and network-related questions or issues. TAC will create a Service Request (SR) number and manage all aspects of the SR until it is resolved. For a complete guide to customer support, see the *Technical Assistance Center User Guide* at:

http://www.extremenetworks.com/go/TACUserGuide

The Extreme Networks eSupport website provides the latest information on Extreme Networks products, including the latest Release Notes, troubleshooting, downloadable updates or patches as appropriate, and other useful information and resources. Directions for contacting the Extreme Networks Technical Assistance Centers are also available from the eSupport website at:

https://esupport.extremenetworks.com

Registration

If you have not already registered with Extreme Networks using a registration card supplied with your product, you can register on the Extreme Networks website at:
http://www.extremenetworks.com/go/productregistration.

Documentation

Check for the latest versions of documentation on the Extreme Networks documentation website at:

http://www.extremenetworks.com/go/documentation

Regulatory Information

All Extreme Networks devices are designed to be compliant with rules and regulations in locations of intended sale and are labeled as required by the authorizing agency. Any changes or modifications to Extreme Networks equipment, not expressly approved by Extreme Networks, could void the user's authority to operate the equipment.

When Extreme Networks devices are professionally installed the Radio Frequency Output Power will not exceed the maximum allowable limit for the country of operation when properly installed.

Antennas: Use only the supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could cause damage and may violate regulations.

Country Approvals

Regulatory markings & ID# have been applied to the device product label signifying the radio (s) are approved for use in the country list located at http://www.extremenetworks.com/go/rfcertification.htm. *This list of countries is extensive and includes but is not limited to* United States, Canada, Australia, Japan, Europe and China. Operation of the device without appropriate regulatory approvals is illegal.

Health and Safety Recommendations

Warnings for the use of Wireless Devices

Please observe all warning notices with regard to the usage of wireless devices.

Potentially Hazardous Atmospheres

You are reminded to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or particles (such as grain, dust, or metal powders) and any other area where you would normally be advised to turn off your vehicle engine.

Safety in Hospitals

Wireless devices transmit radio frequency energy and may affect medical electrical equipment. When installed adjacent to other equipment, it is advised to verify that the adjacent equipment is not adversely affected.

FCC / EU RF Exposure Guidelines

Safety Information. The device complies with internationally recognized standards covering human exposure to electromagnetic fields from radio devices.

Reducing RF Exposure—Use Properly. It is advisable to use the device only in the normal operating position as described in this guide.

Remote and Standalone Antenna Configurations. To comply with FCC RF exposure requirements, antennas that are mounted externally at remote locations or operating near users at stand-alone desktop of similar configurations must operate with a minimum separation distance of 20 cm from all persons.

Power Supply

The AP3550 access point receives power via an Ethernet cable connected to the RJ45 LAN port (using unused pairs). Extreme Networks recommends the model 15729 Power Tap-Altitude 3550 to be used to provide power to the AP3550 access point. The Power Tap is a ruggedized solution designed for outdoor deployments. It is pre-approved for use with the AP3550 and is compliant with several international safety, EMC and Environmental standards. Refer to http://www.extremenetworks.com/go/rfcertification/htm for approved country list.

Caution - Use only an Extreme Networks approved power supply. Use of an alternative power supply may invalidate any approval given to this device and may be dangerous if not properly tested and approved by local agency.

Wireless Devices - Countries

Country Selection. The Extreme Networks AP3550 Access Point is manufactured as 2 model numbers. The location of installation will determine the appropriate model number to choose. Due to unique regulatory requirements within the United States only the United States will appear in the country list upon initial set up. The AP3550-ROW 11abg will list many countries where it is the professional installer and end users responsibility to properly pick the correct country of use and set up the AP in accordance with all instructions provided.

- 15722 AP3550-US 11abg AP (For use in US only)
- 15726 AP3550-ROW 11abg AP (For use in Europe & Rest of World)

The outdoor use of an 802.11abg access point may be allowed but it does have frequency restrictions and may require a license for operation. Please refer to all instructions to properly set up this AP to ensure proper use. Contact local country Authority for procedure to follow and regulatory information. For details on approved countries please visit http://www.extremenetworks.com/go/rfcertification.htm or contact Extreme Networks.

Warning: - Select only the country in which you are using the device. Any other selection will make the operation of this device illegal. The professional installer and end user are responsible to properly follow all instructions and warning when installing this device.

United States

The Extreme Networks 15722 AP3550-US Access Point is dedicated for use in the United States under rules of the FCC. Other countries may use the model if they agree with FCC operating frequencies and powers applicable to this model.

The use on UNII (Unlicensed National Information Infrastructure) Band 1 5150-5250 MHz is restricted to indoor use only, any other use will make the

operation of this device illegal. The AP3550 is not DF2 compliant and is for outdoor use. Therefore, it only operates using 5.725-5.8250 (Channels 149-165)

The available channels for 802.11 b/g operation in the US are Channels 1 to 11. The range of channels is limited by firmware.

FCC - Radio Frequency Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

Radio Transmitters (Part 15). This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada

IC - Radio Frequency Interference Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Radio Transmitters. This device complies with RSS 210 of Industry & Science Canada. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that permitted for successful communication.

This device has been designed to operate with the antennas listed in the *Altitude™ 35xx/45xx AP Antenna Selection Guide* available from http://www.extremenetworks.com/go/documentation, and have a maximum gain of 9dBi (2.4GHz) and 10dBi (5GHz). Antennas not included in this guide, or having a gain greater than 9dBi (2.4GHz) and 10dBi (5GHz) are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

Label Marking: The Term "IC:" before the radio certification signifies that Industry Canada technical specifications were met.

European Economic Area (EEA)

CE Marking. The Altitude model AP3550-ROW 11abg AP is uniquely designed for use in the European Union and other countries with similar regulatory restrictions where the end user or installer is allowed to configure the Altitude AP for operation by selecting a specific country from a list of countries. Upon connection to the controller, software will prompt the user to select a country. After the country is selected, the controller will set up the Altitude AP with the proper frequencies and power outputs for that country as required by authorities. It is the professional user or installer's responsibility to ensure the proper set up of the AP to correct channel limitations, indoor/outdoor restrictions, license requirements, and operation within power level limits for the country of intended operation in accordance with the spectrum usage rules for compliance with the European R&TTE directive 1999/5/EC.

The outdoor use of an 802.11abg access point is allowed in EU but does have frequency restrictions and may require a license for operation. Please refer to all instructions to properly set up this AP to ensure proper use in accordance with all European spectrum usage rules. Contact local country Authority for procedure to follow and regulatory information. For details on approved countries please visit http://www.extremenetworks.com/go/rfcertification.htm or contact Extreme Networks.

The use of 2.4GHz RLAN's, for use throughout the EEA, includes the following countries have the following restrictions:

Europe includes, Austria, Belgium, Bulgaria, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

- Maximum radiated transmit power of 100 mW EIRP in the frequency range 2.400 -2.4835 GHz. (Channels 1-13).
- 5GHz operation is limited to 5.15 to 5.25 GHz (Channels 36 40, 44 & 48) indoor use only. The AP3550 does not support ETSI 301 893 V 1.3.1 therefore 5GHz operation is not allowed for outside applications
- Antenna use is restricted to those antennas listed in *Altitude™ 35xx/45xx AP Antenna Selection Guide* See http://www.extremenetworks.com/go/documentation for details.
- France outside usage, the equipment is restricted to 2.400-2.45 GHz frequency range. Channels 1 - 7.
- Italy & Greece requires a user license for outside usage.
- Belgium requires notifying the spectrum agency if deploying > 300 meter wireless links in outdoor public areas and outdoor operation is only permitted using the 2.46 - 2.4835 GHz band: Channel 13.
- The Altitude APs require the end user or installer to ensure that a valid license is obtained prior to operating the Altitude AP. The license contains the region and any restrictions or configuration limitations required for proper operation in conformance with European National spectrum usage laws.

Statement of Compliance. Extreme Networks hereby, declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. For a copy of *Declaration of Conformity* (DoC) and additional declarations in country languages and warnings please visit http://www.extremenetworks.com/go/rfcertification.htm.

CE 0560 ①

Note - The Altitude AP3550 is in compliance with the European Directive 2002/95/EC on the restriction of the use of certain hazardous substances (RoHS) in electrical and electronic equipment and the European Directive 2002/96/EC (WEEE) on waste electrical and electronic equipment.

RF safety distance. This access point must be installed to provide a separation distance of at least 25cm from all persons and must not be co-located or operating in conjunction with another antenna or transmitter.